Michigan Department of Natural Resources, Forest, Mineral & Fire Management Division

HIGH CONSERVATION VALUE AREA (HCVA) AND ECOLOGICAL REFERENCE AREA (ERA) MANAGEMENT AND MONITORING FORMS PACKET

Portions of this information are exempt from Michigan's Freedom of Information Act, 1976 PA 442, MCL 15.243

BACKGROUND AND INSTRUCTIONS

Prior to using this packet material and forms please refer to Work Instruction 1.4 Biodiversity Management on State Forestlands and the Conservation Area Management Guidelines available on line at:
http://www.michigan.gov/dnr/0,1607,7-153-30301_33360-144865--,00.html.

Identified HCVAs and ERAs will be managed to conserve, protect, maintain, and/or enhance their defined conservation objectives or values. The management methods used will vary depending on the objective and type of designation. On DNR-managed lands, Ecological Reference Areas may be protected through a variety of mechanisms (refer to Conservation Area Management Guidance). Management activities or prescriptions in Ecological Reference Areas are highly restricted to those that maintain or enhance the defined attributes and values and protect the immediate natural resource values or human health and safety.

This packet is for each High Conservation Value Area (HCVA) without an existing management plan and all Legally Dedicated State Natural Areas, Ecological Reference Areas (ERA), Critical Dunes and Coastal Environmental Areas on state forest land. Its purpose is to: 1.) document baseline information on each area and it's conservation values, threats, management goals and objectives, and 2.) to track changes in threats, when management activities are carried out, monitor if they are effective, and capture needed changes in management determined not to be effective.

Keep the original copies of these forms in the Compartment/Stand File within each FMU and send copies to respective DEQ and DNR program managers and the DNR, FMFM Forest Resource Management Section, Monitoring Specialist.

SUMMARY: LOCATION MAP, MANAGEMENT RECOMMENDATIONS

PART I: HCVA BASELINE INFORMATION , GOALS AND OBJECTIVES

- ☒ COMPLETE FOR EACH HCVA WITHOUT AN EXISTING MANAGEMENT PLAN
- ☒ PART I TO ACCOMPANY PART II

SECTION 1: SITE INFORMATION

A. HCVA TYPE
B. SITE ,CONTACT AND ADMINISTRATIVE INFORMATION
C. OWNERSHIP INFORMATION
D. CONSERVATION PARTNERS
E. OTHER DOCUMENTS RELATED TO THIS HCVA

SECTION 2: CONSERVATION VALUES (TARGETS)

A. BIODIVERSITY VALUES
B. SOCIAL/ECONOMIC VALUES
C. INFRASTRUCTURE/FACILITIES VALUES

SECTION 3: CURRENT CONDITIONS (THREATS)

A. VALUE OR TARGET VIABILITY (POOR, FAIR, GOOD, VERY GOOD)
B. CURRENT PRIMARY THREATS

SECTION 4: MANAGEMENT GOALS AND OBJECTIVES

PART II: HCVA MONITORING

SECTION 5: COMPLIANCE MONITORING (WERE TASKS COMPLETED?)

SECTION 6: EFFECTIVENESS MONITORING AND RECOMMENDATIONS (HOW WELL DID MANAGEMENT WORK OR WERE OBJECTIVES ACHIEVED? WHAT ARE NEXT THE STEPS?)

SECTION 7: THREATS MONITORING FIELD FORM – STAND ALONE FORM (WHAT IS THE STATUS OF VALUES OR TARGETS?)

- ☐ MAY BE COMPLETED BY ANYONE FOR ANY HCVA
- ☐ OR PART OF MONITORING PACKET TO ACCOMPANY PART I AND PARTS II, SECTIONS 6, 7 AND PART III.

Helpful References:

Marqoluis, R. and N. Salafsky. 1998. Measures of Success. Island Press, Washington, DC.362 pp.

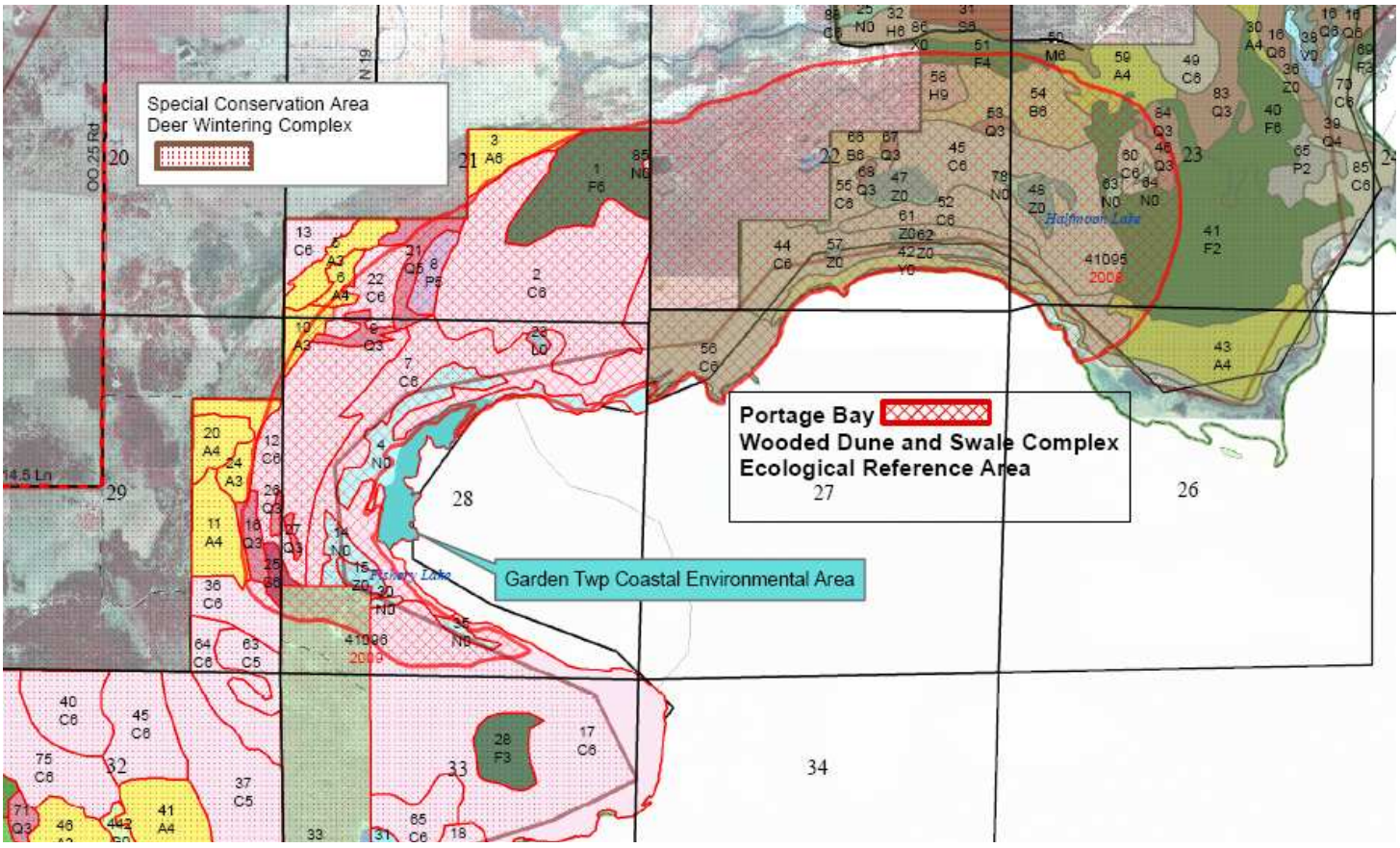
The Nature Conservancy. 2005. CAP (Conservation Action Planning) Toolkit - version 08-23-05. See 2007 overview at http//sites-conserveonline.org/dcs/projects/art10152.html and the workbook at http://www.conserveonline.org/2003/07/s/ConPrjMgmt_v4

SUMMARY

Portage Bay
Wooded Dune and Swale
Ecological Reference Area (ERA)

Shingleton Forest Management Unit
Compartments 95, 96
Delta County
T39N R18W Sections 21, 22, 23, 26, 27, 28, 29

197 Private Acres
963 State Acres
1,160 Total Acres



SECTION 4: RECOMMENDED MANAGEMENT GOALS AND ACTIVITIES (REPEATED HERE FROM SECTION 4 AT END)

CHECK ALL GOAL CATEGORIES THAT APPLY

- ☒ NATURAL COMMUNITY MAINTENANCE OR ENHANCEMENT GOALS
- ☒ ECOLOGICAL SYSTEMS MAINTENANCE OR ENHANCEMENT GOALS
- ☒ SPECIES MAINTENANCE OR ENHANCEMENT GOALS
- ☐ SPECIES RESTORATION GOALS
- ☒ SOCIAL ECONOMIC GOALS
- ☐ INFRASTRUCTURE/FACILITIES GOALS
- ☒ ADMINISTRATIVE GOALS– PROTECTION STATUS; CAPACITY BUILDING; FUNDING, VOLUNTEERS

SECTION 4: RECOMMENDED MANAGEMENT GOALS AND ACTIVITIES (REPEATED HERE FROM SECTION 4 AT END)

Goal 1: Protect and maintain high quality wooded dune and swale natural community and associated wildlife habitat by letting natural processes take their course when compatible with ERA and Management Goals.

Objective 1: Follow FMFM Policy and Procedure 572 for wildfire suppression in the ERA.

Task 1: As time and resources, become available, Unit staff to work with Resource Protection Specialist to develop wildfire response plan and use Minimum Impact Suppression Techniques (MIST).

Task 2: Consider prescribed fire as a potential management tool for restoration purposes if needed in dry and dry mesic northern forests.

Objective 2: **Monitor for illegal ATV use and enforce land use rules as needed on state land. (Follow DNR Work Instruction 7.2) http://www.michigan.gov/documents/7_133228_7.2.pdf**

Task 1: Work with local enforcement to control illegal ORV use by reporting any discovered uses to law enforcement.

Task 2: Stand examiners will consider proposing road closures as part of the normal inventory process (based on 2009 YOE OI) and block ORV access where feasible. Road closure proposals must consider damage resulting from ORVs and other forest users bypassing the road closure.

Task 3: Monitor natural reforestation of the trails after ORV closure through normal inventory processes.

Objective 3: Enforce local land use rules to remove illegal blinds and trash.

Task 1: Follow Work Instruction 7.2 and continue to refer illegal trash and blinds to DNR Law Enforcement Division (LED).

Objective 4: Maintain closed canopy conifer stands as well as super-canopy trees and develop a management approach that focuses on the long-term sustainability of northern white cedar.

Task 1: Evaluate and monitor regeneration through normal inventory process.

Task 2: Per regeneration evaluation, passively recruit northern white cedar by allowing natural processes to occur and do not salvage cut within the ERA unless it is conducive to ERA goals.

Goal 2: Protect and maintain known populations of listed species such as dwarf lake iris and Pitcher's thistle.

Objective1: Maintain habitat by a.) Following Work Instruction 7.2 and reporting illegal ORV use to LED and b.) Allowing natural process to occur within the ERA when compatible with ERA management goals.

Goal 3: Seek appropriate level of protection for the ERA on private land in-holdings.

Objective 1: At the District and Statewide levels, work conservation groups to seek voluntary cooperation with landowners within holdings within the ERA using DNR private land programs.

Objective 2: Support opportunities for acquisition and/or work with conservation groups to acquire conservation easements on private land.

Objective 3: At the District and Statewide Levels, consider working with Parks and Recreation Bureau, Fisheries Division and/or MDOT to develop interpretive information about the Wooded Dune and Swale complex and associated ERA's in the Garden Peninsula. (Opportunities exist at Fayette and Indian Lake State Parks, MDOT Roadside Park on US-2 and Thompson Hatchery).

PART I: HCVA BASELINE INFORMATION , GOALS AND OBJECTIVES

SECTION 1: SITE INFORMATION

A: HCVA TYPE – CHECK ALL THAT APPLY

☐ Critical Dune as defined by DEQ
☐ Legally Dedicated State Natural Area
☒ Ecological Reference Area:
Portage Bay Wooded Dune and Swale
☐ Endangered Species Management Area
☐ Kirtland Warbler
☐ Piping Plover
☐ Other:

☒ Coastal Environmental Area as defined by DEQ:
Garden Twp Coastal Environmental Area
☐ State Natural or Scenic River
☐ Quiet Area:
☐ Other

SPECIAL CONSERVATION AREA - LIST OTHER CATEGORIES BELOW

Special Conservation Area – Near shore mature conifers as a midge nursery for migrating warblers.
Special Conservation Area – Deer Wintering Complex.

B: SITE, CONTACT AND ADMINISTRATIVE INFORMATION

Site Name: **Portage Bay Wooded Dune and Swale ERA**		Other Names	
ReportDate (mm/dd/yyyy) **Draft 1:11/08/07** **Updated: 10/ 8/2008** **12/04/2008**	Forest Mgt Unit **Shingleton**	Compartment Number(s): Stand Number(s) **Compt. 95: Stands 56, 44, 57, 42, 61, 62, 55, 68, 66, 67, 47, 53, 78, 48, 43, 41, 45, 64, 60, 63, 84,59, 46, 54, 51, 58** **Compt 96: Stands 1, 2, 85, 8, 21, 22, 7, 9, 12, 23, 14, 15, 16, 25, 26, 27, 30, 35** ☒ Map Attached ☐ Shape File in OI/IFMAP GDSE File Location/Name	
County(ies) **Delta**		Township(s), Range(s), Section(s) ¼ Sec. Optional if mapped **T39N, R18W Sections 21, 22, 23, 26, 27, 28, 29**	
Name of individual completing this form (first and last) ☒ Check if DNR Employee **Kim Herman, Monitoring Specialist, Forest, Mineral, Fire Management Division (FMFMD), Escanaba** **Robert Burnham, Forester, FMFMD, Manistique** **David Jentoft , Wildlife Techincian, Wildlife Division** **Darren Kramer, Fisheries Biologist, Fisheries Division, Gladstone**		Telephone **(906) 786-2351** **(906) 341-8643** **(906) 452-6236** **(906) 786-2351 ext 128**	Email Address **hermank@michigan.gov** **burnharg@michigan.gov** **jentoftd@michigan.gov** **kramerd@michigan.gov**
Additional contact information Name of individual providing information (first and last), if applicable **Jeff Stampfly, FMU Manager, FMFM , Shingleton** **Terry Minzey, Wildlife Supervisor, WLD, Newberry**		Telephone **(906) 452-6227 ext 240** **(906) 293-3293**	Email Address **stampflg@michigan.gov** **minzeyt@michigan.gov**
Name of DNR/DEQ Program Contact if Applicable **Mike Smolinski, DEQ, Gwinn**		Telephone **(517) 346-8562**	Telephone **smolinskim@michigan.gov**
☐ Volunteer (s) Number of Volunteers: Name of Group: Contact Name:		Telephone ( )	Email Address

C: OWNERSHIP INFORMATION - CHECK ALL THAT APPLY AND INCLUDE NAME OF THE UNIT:

☒State Forest Land: **Shingleton Forest Management Unit**
☐State Park/Recreation Area:
☐State Game Area:
☒Other or Private Land (describe): **Several private parcels**

D: CONSERVATION PARTNERS – FILL IN ALL KNOWN PARTNERS

Name of Organization: **The Nature Conservancy**
Contact Name: **Christine (Tina) Hall**
Email Address: **chall@tnc.org**
Telephone **(906) 225-0399 ext 12**

Name of Organization: **Michigan Natural Areas Council**
Contact Name: **Phyllis Higman**
Email Address: **mnac@cyberspace.org**
Telephone ( )

Name of Organization Contact Name: Email Address Telephone ( )	Name of Organization Contact Name: Email Address Telephone ( )

E: OTHER DOCUMENTS RELATED TO THIS HCVA – CITATION AND LOCATION WHERE STORED

Albert, Dennis A. 1995. Regional landscape ecosystems of Michigan, Minnesota, and Wisconsin: a working map and classification. Gen. Tech. Rep. NC-178. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 250 pp

Albert, D.A. and P.J. Comer. 1999. Natural community abstract for wooded dune and swale complex. Michigan Natural Features Inventory, Lansing, MI. 6 pp. http://web4.msue.msu.edu/mnfi/abstracts/ecology/Wooded_dune_and_swale_complex.pdf

Comer, P.J. and D.A. Albert. 1991. A Survey of Wooded Dune and Swale Complexes in the Northern Lower and Eastern Upper Peninsulas of Michigan. A report by the Michigan Natural Features Inventory to the Coastal Management Program, Michigan Department of Natural Resources. 99 pp.

Comer, P.J. and D.A. Albert. 1993. A Survey of wooded dune and swale complexes in Michigan. Report to Michigan DNR - Land and Water Mgmt. Div., CZM Program. 159 pp.

Site Summary for Portage Bay Wooded Dune and Swale from Cohen, J.G., B.S. Slaughter, and M.A. Kost. 2008. Natural Community Surveys of Potential Ecological Reference Areas on State Forest Lands. Michigan Natural Features Inventory, Report Number 2008-04, Lansing, MI. 272 pp.

Kost, M.A., D.A. Albert, J.G. Cohen, B.S. Slaughter, R.K. Schillo, C.R. Weber, and K.A. Chapman. 2007. Natural Communities of Michigan: Classification and Description. Michigan Natural Features Inventory, Report No. 2007-21, Lansing, MI. Wooded Dune and Swale Complex

Kost, M. A., R. K. Schillo, and B. S. Slaughter. July 31, 2006. Portage Bay Wooded Dune and Swale EO-36-3085.csv Plant Survey List Excel Worksheet, Michigan Natural Features Inventory, Lansing, MI

SECTION 2: CONSERVATION VALUES/TARGETS - CHECK ALL THAT APPLY

A: BIODIVERSITY VALUES

There are a number of ways to describe biodiversity values - check all that apply.

1. **Natural Communities** – Based on Michigan Natural Features Inventory Community Classification.

   GO to: http://web4.msue.msu.edu/mnfi/data/MNFI_Natural_Communities.pdf; http://web4.msue.msu.edu/mnfi/pub/abstracts.cfm

   Quality Rank comes from specific MNFI Element Occurrence Records (EOR) in the FMFM IFMAP Biodiversity Data Layer.

Community Name	State Rank	Global Rank	Quality Rank A,B,C,D
Wooded dune and swale complex	**S3**	**G3**	**AB**

Other information if known.

2. ☐ **Ecological Systems** .

Check Applicable Regional Landscape Ecosystem (Section), Subsection, and Sub-subsection from Albert, Dennis A. 1995. Regional landscape ecosystems of Michigan, Minnesota, and Wisconsin: a working map and classification. Gen. Tech. Rep. NC-178. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 250 pp.

Name	Section Number	Subsection Number	Sub-subsection Number
Section VIII. Northern Lacustrine-Influenced Upper Michigan and Wisconsin	**8**		
Subsection VIII.1. Niagaran Escarpment and Lake Plain	**8**	**1**	
Sub-subsection VIII.1.3. Escanaba/Door Peninsula	**8**	**1**	**8.1.3.**

☒ **List name(s) of Ecosystems/Natural Communities (based on MNFI Community Classification):**:

Wooded Dune and Swale Complex is a large complex of parallel wetland swales and upland beach ridges (dunes) found in coastal embayments and on large sand spits along the shorelines of the Great Lakes. The upland dune ridges are typically forested, while the low swales support a variety of herbaceous or forested wetland types, with open wetlands more common near the shoreline and forested wetlands more prevalent further from the lake. Wooded dune and swale complexes occur primarily in the northern Lower and Upper Peninsulas and Thumb region.

Wooded dune and swale complexes formed as a result of receding Great Lakes water levels and post-glacial uplift that created a series of parallel, arced, low sand ridges and swales. They were formed in two stages by retreating water levels and post-glacial uplift beginning with glacial Lake Algonquin approximately 12,000 years ago. As lake levels progressively receded, they deposited a series of low, parallel, sandy beach ridges ranging in height from 0.5

m to 4.0 m. The alternating sequence of arced sand ridges and associated swales often extends up to two miles inland. Vegetative succession has since created a distinct pattern of communities or zones across this landscape complex. The flow of surface streams and groundwater is critical for maintaining saturated to inundated conditions in swales. Because of the close proximity to the shoreline, windthrow is common, especially on the loose organic soils of swales where anaerobic conditions limit the rooting depth of trees. Along-shore currents, waves, and wind create and continuously re-work foredunes along the shoreline. Additional important components of the natural disturbance regime include fire, beaver flooding, and insect epidemics. (Above excerpted from Kost et al, 2007).

Complexes within the Northern Lake Huron/Lake Michigan-Low Dune sub-type are commonly found in embayments with little exposure to prevailing westerly winds. As a result, the low beach ridges (0.5-1m) of these complexes are almost entirely water-lain. They generally support wetland vegetation, both in the swales and on many of the ridges. All complexes along the Northern Lake Huron shoreline fall into this category. Along the Northern Lake Michigan shoreline, complexes of this subtype are found in portions of Mackinac, Schoolcraft, and Delta counties, where embayments are protected from westerly winds. Because the sandy soils along these shorelines are partly derived from limestones and dolomites of the underlying Niagaran Escarpment, plant species associated with moist, calcareous conditions, including Great Lakes endemics such as Houghton's goldenrod and dwarf lake iris, are commonly found close to the shoreline (Excerpted from Albert and Comer, 1999).

**Wooded Dune & Swale State Distribution
Albert and Comer, 1999**

**Portage Bay Wooded Dune & Swale Complex
Photos by Bradford S. Slaughter, MNFI Ecologist
July 31, 2006**

Portage Bay Wooded Dune and Swale Complex Site Summary

Natural Community Type: Wooded Dune and Swale Complex
Subtype: Northern Lake Huron/Lake Michigan Low Dune (Comer and Albert 1993)
Rank: G3 S3, very rare and local throughout range
Element Occurrence Rank: AB
Location: Shingleton Forest Management Unit, Compartments 95 and 96, and Private Lands
Element Occurrence Identification Number: 3085

***Site Description from Cohen et al 2008*: This large wooded dune and swale complex occurs along Portage Bay on the Garden Peninsula on a silt/clay lakeplain with low sandy beach ridges. The Portage Bay site, which occurs along the shore of northern Lake Michigan, is an extensive wooded dune and swale complex with more than seven ecological communities and over 180 native plant species documented. Extensive limestone cobble shore and sand and gravel beach grade to open dunes, which are backed by Interdunal wetlands. Further inland, the dune ridges are dominated by dry northern forest, dry mesic northern forest, and mesic northern forest while northern wet meadow and rich conifer swamps dominate the swales. The site contains three moderate-sized inland lakes, one with a bog community occurring along the margin.**

The beach ridges are dominated by white pine (*Pinus strobus*), red pine (*P. resinosa*), balsam fir (*Abies balsamea*), and paper birch (*Betula papyrifera*) with localized hemlock (*Tsuga canadensis*). Characteristic ground cover of the ridges includes low sweet blueberry (*Vaccinium angustifolium*), starflower (*Trientalis borealis*), Canada mayflower (*Maianthemum canadense*), bearberry (*Arctostaphylos uva-ursi*), and trailing arbutus (*Epigaea repens*). Northern white-cedar (*Thuja occidentalis*), balsam fir, black spruce (*Picea mariana*), and white spruce (*P. glauca*) dominate the forested swales. Also common in the swales are false mayflower (*Smilacina trifolia*), goldthread (*Coptis trifolia*), alderleaved buckthorn (*Rhamnus alnifolia*), tag alder (*Alnus rugosa*), Labrador tea (*Ledum groenlandicum*), and ebony sedge (*Carex eburnea*). Four rare plants associated with near shore dunes were documented during surveys: dwarf lake iris (*Iris lacustris*, state threatened), Lake Huron tansy (*Tanacetum huronense*, state threatened), Pitcher's thistle (*Cirsium pitcheri*, federal/state threatened), and Richardson's sedge (*Carex richardsonii*, state special concern).

☒ Ecological processes - connectivity, hydrology, fire, wind events, flooding, pest and disease cycles;

Describe: (*From Kost et al 2007and Albert and Comer, 1999*) **Because of the close proximity to the shoreline, windthrow is common, especially on the loose organic soils of swales where anaerobic conditions limit the rooting depth of trees. A combination of surface flow and ground water is critical for maintaining saturated to inundated conditions in swales. Hydrology in the swales that is perched and maintained by a fractured limestone shelf**

(bedrock)and two lakes with out-flowing creeks. Hydrology near shore is maintained by fluctuating great lakes water levels and further inland by precipitation and surface water. Along-shore currents, waves, and wind create and continuously re-work foredunes along the shoreline. Additional important components of the natural disturbance regime include fire, beaver flooding, and insect epidemics.

☒ Underlying environmental features - soils, geology, topography, headwaters;

Describe: **Silurian and Ordovician aged sedimentary bedrock, principally limestone and dolomite: Resistant Niagrian series of dolomite and limestone is locally exposed as flat limestone pavement along the Lake MI shoreline. The bedrock is typically less than 50 feet below the surface. Lacustrine soils are primarily sands underlain in the lake plain by clay or bedrock and organic material gradually accumulates in swales over time. (Albert 1995; and Albert and Comer 1999 wooded dune and swale abstract.)**

☒ Environmental gradients - elevation, precipitation, temperature;

Describe: **Regional slope is generally 8-10' per mile, local topography starts at the great lakes shore line/lake level and goes inland approximately 3/4 miles with dunes on average about 1-2 meters high with highest dune being about 5 meters high.,**

☒ Species and/or community structure – using during migration, during different life stages, or gradual species turnover across environmental gradients.

Describe: **Upland forested ridges/dunes are red pine, white pine, some hemlock, white birch and trembling aspen. Lowland Forested swale: Conifers are primarily cedar with some black spruce and fir. These near shore conifer areas are important nurseries for spring midge hatches which provide vital protein/food for neo-tropical migrants. Open swales and open fore dunes associated with the beach. Three shallow lakes 8 and 10 acres in size one with an associated marsh community.**

☒ Nested large and small natural communities linked by functional or restorable:
Portage Bay Wooded Dune and Swale is comprised of seven ecological communities with over 180 native plant species documented. Extensive limestone cobble shore and sand and gravel beach grade to open dunes, which are backed by Interdunal wetlands. Further inland, the dune ridges are dominated by dry northern forest, dry mesic northern forest, and mesic northern forest while northern wet meadow and rich conifer swamps dominate the swales. The site contains three moderate-sized inland lakes, one with a bog community occurring along the margin.

☒ **High quality natural communities nearby:**

Describe: **Five Ecological Reference Areas Alvar (limestone bedrock glades and limestone bedrock lakeshore) about 3 miles southwest. A C ranked limestone bedrock lakeshore is 1.2 miles SW . The Big Bay De Noc Wooded Dune and swale is 9 miles north and the Thompson Wooded Dune and Swale ERA is 13 miles northeast.**

Also nested within the Special Conservation Area - Garden Peninsula large Deer Wintering Complex (see below).

Buck Fever Lake and Half Moon Lake, Fishery Lake important to water fowl, king fishers, and small mammals. And not important for sport fishery.

☒ Large Block Size

General Shape and Acres: **1,160 acres, considered extensive by Michigan Natural Features Inventory ecologists (Cohen et al, 2008)**

3. Species Assemblages – List types of species assemblage targets.

☒ Major groupings of species – share common natural processes or have similar conservation requirements (e.g., freshwater mussels, forest-interior birds, essential pollinators). **The near shore is a stop over and feeding area for neo-tropical migrants, dependent on the midge hatches.**

The Coastal Environmental Area is an important spawning and nursery area for juvenile fish .

Garden Peninisula deer wintering complex is used primarily by local deer that migrate to the east shore of the Garden Peninsula in the winter. The Garden Peninsula has deer year round due to surrounding agricultural lands, and due to lower average snow depths this complex is also important to the larger EUP deer herd.

☐ Globally significant species aggregations (e.g. migratory shorebird aggregation).

4. Species - List types of species by common and scientific name.:

☐ Focal species - keystone, wide-ranging (regional), providing linkages between ecosystems, and umbrella species.

☒ Globally imperiled or state endangered or threatened native species - Ranked G1, G2, G3 by NatureServe, and S1, S2 by MNFI, state and/or federally listed or proposed for listing as Threatened or Endangered (MI and U.S.), and on the IUCN Red List (International).

The following rare plants are known from within the ERA.

Iris lacustris (Dwarf Lake Iris) - MNFI Rare Species Explorer

- **State Status: T - Threatened (legally protected)**
- **US Status: LT - Listed Threatened**
- **State Rank: S3 - Vulnerable**
- **Global Rank: G3 - Vulnerable**

Cirsium pitcheri (Pitcher's Thistle) - MNFI Rare Species Explorer

- **State Status: T - Threatened (legally protected)**
- **US Status: LT - Listed Threatened**
- **State Rank: S3 - Vulnerable**
- **Global Rank: G3 - Vulnerable**

Tanacetum huronense (Lake Huron Tansy) - MNFI Rare Species Explorer

- **State Status: T - Threatened (legally protected)**
- **State Rank: S3 - Vulnerable**
- **Global Rank: G5T4T5**

Bald Eagles are known to nest within 2 miles of the ERA and do fish in the near shore of Portage Bay, Lake MI.
Haliaeetus leucocephalus (Bald Eagle) - MNFI Rare Species Explorer

- **State Status: T - Threatened (legally protected)**
- **State Rank: S4 - Apparently secure**
- **Global Rank: G4 - Apparently secure**

☒ Species of Special Concern - Due to vulnerability, declining trends, disjunct distributions, or endemic status; Ranked S3 by MNFI:

Osprey are known to nest within two miles of the wooded dune and swale and fish in the near shore of Portage Bay, Lake MI.
Pandion haliaetus (Osprey) - MNFI Rare Species Explorer

- **State Status: T - Threatened (legally protected)**
- **State Rank: S4 - Apparently secure**
- **Global Rank: G5 - Secure**

The following rare plant was documented from the Portage Bay Wooded Dune and Swale:

Carex richardsonii (Richardson's Sedge) - MNFI Rare Species Explorer

- **State Status: SC - Special Concern (rare or uncertain; not legally protected)**
- **State Rank: S3S4 - Rank is uncertain, ranging from vulnerable to apparently secure**
- **Global Rank: G4 - Apparently secure**

☐ Other species of greatest conservation need - Identified as part of Michigan's Wildlife Action Plan due to declining populations or other characteristics that may make them vulnerable.

B: KNOWN SOCIAL/ECONOMIC VALUES	C: EXISTING INFRASTRUCTURE/FACILITIES:
☒ **Archaeological** ☒ Historical – **nearby to Fayette State Park** ☒ Recreational: ☐ Camping ☒ Canoeing/Kayaking – **Lake Michigan** ☒ Fishing – **Lake Michigan** ☐ Hiking/Backpacking: ☒ Hunting: **Waterfowl and deer** ☒ Photography ☒ Scenic – **Lake MI Shoreline** ☒ Water (lake, river, stream): **Lake MI** ☐ Wildlife Viewing ☐ Cross Country Skiing ☐ Other ☐ Restorative/Spiritual ☐ Traditional Use/Gathering	☐ American Disability Accessibility (ADA) Considerations ☐ Boat Launch(es) ☐ Bridge(s): ☐ Campground(s): ☐ Interpretive Displays ☐ Marked boundaries ☐ Parking lot(s): ☐ Posted use rules ☐ Scenic Overviews ☐ Toilet(s) ☐ Trails/Boardwalks ☒ Other **A historical road occurs along the beach, routinely used by locals.**

SECTION 3: CURRENT CONDITIONS D. CURRENT STATUS/VIABILITY OF CONSERVATION VALUE/TARGET (FROM TNC CAP TOOL KIT) STATUS DEFINITIONS – POOR - IMMINENT LOSS, FAIR – VULNERABLE, GOOD – MINIMUM INTEGRITY, VERY GOOD - OPTIMAL INTEGRITY				
LIST CONSERVATION VALUE/TARGET FROM SECTION 2 – A, B OR C	*CHOOSE CATEGORY: SIZE, CONDITION, OR LANDSCAPE CONTEXT*	*LIST KEY ATTRIBUTE*	*LIST INDICATOR*	*CHOOSE CURRENT STATUS POOR, FAIR, GOOD, OR VERY GOOD*
WOODED DUNE AND SWALE COMPLEX INCLUDING: * LIMESTONE COBBLE SHORE SAND AND GRAVEL BEACH * OPEN DUNES * INTERDUNAL WETLANDS * DRY NORTHERN FOREST * DRY MESIC NORTHERN FOREST * MESIC NORTHERN FOREST * NORTHERN WET MEADOW * RICH CONIFER SWAMP * INLAND LAKES ONE W/ A BOG	SIZE CONDITION LANDSCAPE CONTEXT	INTACT NATURAL PROCESSES HYDROLOGY WINDTHROW FIRE	INTACT NATURAL COMMUNITIES & FOREST STRUCTURE (SEE LIST) CHARACTERISTIC FLORA HIGH FLORISTIC QUALITY * > 180 NATIVE SPECIES * NATIVE FQI= 77 IN 2006	VERY GOOD
DEER WINTER HABITAT	SIZE, CONDITION, & LANDSCAPE CONTEXT	UPLAND AND LOWLAND CLOSED CANOPY CONIFER FOREST	BROWSE CONDITION AND CANOPY CLOSURE	GOOD
NEOTROPICAL MIGRANT STAGING AREA	SIZE, CONDITION, & LANDSCAPE CONTEXT	MIDGE HATCH UPLAND AND LOWLAND CLOSED CANOPY CONIFER FOREST ADJACENCY TO GREAT LAKES SHORELINE	FOREST STRUCTURE	GOOD
EAGLES AND OSPREY	LANDSCAPE CONTEXT	NESTING AND PERCHING HABITAT, PRESENCE OF WATER ALONG LAKESHORE	SUPER CANOPY TREES	VERY GOOD
DWARF LAKE IRIS	SIZE AND CONDITION	OPENINGS WITHIN WOODED DUNE AND SWALE COMPLEX	EXTENT AND FLOWERING PLANTS	UNKNOWN
ARCHAEOLOGICAL	CONDITION LANDSCAPE CONTEXT	IN STATE ARCHAEOLOGIST FILES	LACK OF NEW SOIL DISTURBANCE	UNKNOWN
HUNTING – DEER, BEAR, GROUSE, WOODCOCK, HARE WATER FOWL	SIZE, CONDITION, & LANDSCAPE CONTEXT	FOREST COVER DIVERSITY	EVIDENCE OF HUNTER ACTIVITY	VERY GOOD
SCENIC SHORELINE	SIZE AND CONDITION	3.1 MILES CONTIGUOUS AND WITHIN 6.5 MILES OF UNINTERUPTED STATE OWNERSHIP AND UNDEVELOPED SHORELINE	LENGTH OF UNDEVELOPED SHORELINE W/IN STATE OWNERSHIP LACK OF HUMAN CAUSED DISTURBANCE	GOOD

E. : INITIAL PRIMARY THREATS ASSESSMENT TO ESTABLISH BASELINE CONDITION

CHECK ALL THAT THERE IS ACTUAL EVIDENCE FOR AND DESCRIBE THE EVIDENCE BRIEFLY AND/OR ATTACH PHOTOS
DO THIS INITIALLY FROM AERIAL PHOTOS, LOCAL KNOWLEDGE, AND EXISTING DATA FOLLOWED BY A SITE VISIT.

A. Habitat Conversion & Degradation – Complete or substantial **loss of or damage** to natural habitats.

- ☐ Altered Fire Regime Suppression or increase in fire frequency and/or intensity outside of its natural range of variation
- ☐ Altered Hydrologic Regime Changing water flow patterns outside their natural range of variation *(surface water diversion, groundwater pumping, dam operations*
- ☐ Commercial & Industrial Development: *factories, stand-alone shopping centers, office parks, train yards, docks, ship yards, airports, landfills)*
- ☐ Farms & Plantations Agricultural operations *(commercial farms, industrial plantations, feed lots, aquaculture)*
- ☐ Housing & Urban Development Expansion of cities, towns, settlements, non-housing development *(urban areas, suburbs, villages, homes, shopping areas, offices, schools, hospitals)*
- ☐ Military Activities Actions by formal or paramilitary forces *(military bases, defoliation, munitions testing*
- ☐ Natural System Modifications Actions that convert or degrade habitat to "managing" natural systems for human welfare - *dam construction, land reclamation, wetland filling, rip-rap along shoreline, levees and dikes)*
- ☐ Recreation Areas Recreation sites with a substantial footprint *(ski areas, golf courses, resorts, county parks)*
- ☒ Other: **Illegal ORV trails from the beach inland through the wetlands and ORV use up and down the lakeshore, changing hydrology and directly altering habitat**.

B. Transportation Infrastructure – Long narrow corridors **altering, fragmenting, and disturbing** natural habitat and species, including soil erosion/sedimentation, and providing routes for invasive or problematic species.

- ☐ Flight Paths :
- ☐ Railroads:
- ☒ Roads and Trails: **N/S logging road with sole access from private land facilitating illegal ORV access off either side disrupting hydrology and causing erosion. .**
- ☐ Shipping Lanes:
- ☐ Trails:
- ☐ Utility Lines.
- ☒ Other: **Small illegal boat landing on Buck Fever Lake**.

C. Energy & Mining – Production of non-biological resources **having negative impacts** to conservation values.

- ☒ Mining – *Exploring, developing, and producing*. **Within the ERA DNR owns both minerals and surface except of private land in the SW SW of Section 28 near Fishery Lake.**
- ☐ Oil & Gas Drilling
- ☐ Renewable Energy – *Exploring, developing, and producing.*

D. Biological Resource Harvesting –Over or under consumption of "wild" resources **resulting in loss** of conservation values.

- ☐ Gathering – *Harvesting plants, fungi, and other non-timber/non-animal products for commercial, recreation, or subsistence purposes*.
- ☐ Grazing
- ☒ Hunting, Trapping & Fishing – **Approximately a dozen or more permanent illegal deer blinds with cutting shooting lanes, trash and erosion associated illegal ORV trails..**
- ☒ Timber Harvesting: **Clear cut harvest with hemlock to be reserved is currently proposed in Compartment 95, Stand 50 south of County Road and north of existing boundary, it is outside of the ERA, thought the habitat is similar. Potential for harvesting on private land.**

E. Recreation & Research – Non-consumptive uses of biological resources **resulting in damage** to natural resources**.**

- ☐ Human-Powered Recreation – *mountain bikes, hikers, backpackers, cross-country skiers, rock climbers, canoeists, kayakers, hang-gliders, birdwatchers, photographers*
- ☒ Motor-Powered Recreation - *Traveling outside of established transport corridors: off-road vehicles, motorcycles, motorboats, jet-skis, snowmobiles, ultra-light planes.* **Illegal ORV use disrupting hydrology, causing erosion, and degradation**.
- ☐ Scientific Research – *Ecosystem manipulations*

E. : INITIAL PRIMARY THREATS ASSESSMENT TO ESTABLISH BASELINE CONDITION

F. Pollution – Introduction of exotic and/or excess materials from point and non-point sources with **evidence of resource damage**. Key question is how do we measure damage for each of the criteria or do we really on expert opinion from outside agencies?

- ☐ Chemicals & Toxins
- ☐ Greenhouse Gasses –*CO_2, methane*
- ☐ Light Pollution
- ☐ Noise Pollution
- ☐ Nutrient Loads
- ☐ Radioactive Materials
- ☐ Salt/Brine
- ☒ Solid Waste – *garbage, litter* Litter associated with hunting use. **An illegal dumping along Bullrun Road (DNR owned) and the Gold Mine County Road.**
- ☐ Thermal Pollution
- ☐ Waste & Residual Materials – *dredge spoil, water treatment residuals, slash, mine tailings, excess sediment loads.*

G. Invasive & Other Problematic Species & Genes – Aquatic or terrestrial non-native and native species or genetic materials that have or are predicted to have harmful effects on biodiversity following their introduction, spread and/or increase in abundance. List species, extent of infestation and fill out Forest Health Form.

- ☐ Introduced Genetic Material
- ☒ Invasive Species Possible - **The following invasive plants were noted in the July 2006 Portage Bay site survey: *Centaurea maculosa,* Spotted Knappweed. *Chrysanthemum leucanthemum,* Ox Eye Daisy, *Cirsium palustre,* Marsh Thistle, *Poa compressa,* Canada Bluegrass. MNFI noted Rhamus frangula – glossy buckthorn in Section 35 @ 1.5 miles to the SW**

  Potential threat due to possible introduction of Emerald Ash Borer due to firewood use at campground.
- ☒ Problematic Native Species : **MNFI noted deer browse is affecting cedar regeneration. Note that one of the values of the area is also a deer wintering complex.**
- ☐ Hybrid Species

H. Climate Change – Evidence of impacts from long-term changes linked to global warming and other climate issues.

- ☐ Climate Variability – Intensification and/or alteration of normal weather patterns - *droughts, high wind or rain event.*
- ☐ Habitat Shifting & Alteration

I. Other

SECTION 4: RECOMMENDED MANAGEMENT GOALS AND ACTIVITIES

LIST GOAL(S), FOR EACH VALUE, RELATED THREAT ABATEMENT, MAINTENANCE OR ENHANCEMENT NEED IDENTIFIED IN SECTIONS 2 AND 3

CHECK ALL GOAL CATEGORIES THAT APPLY

- ☒ NATURAL COMMUNITY MAINTENANCE OR ENHANCEMENT GOALS
- ☒ ECOLOGICAL SYSTEMS MAINTENANCE OR ENHANCEMENT GOALS
- ☒ SPECIES MAINTENANCE OR ENHANCEMENT GOALS
- ☐ SPECIES RESTORATION GOALS
- ☒ SOCIAL ECONOMIC GOALS
- ☐ INFRASTRUCTURE/FACILITIES GOALS
- ☒ ADMINISTRATIVE GOALS– PROTECTION STATUS; CAPACITY BUILDING; FUNDING, VOLUNTEERS

GOAL# AND DESCRIPTION FROM SECTIONS 2 AND 3

Goal 1: Protect and maintain high quality wooded dune and swale natural community and associated wildlife habitat by letting natural processes take their course when compatible with ERA and Management Goals.

Objective 1: Follow FMFM Policy and Procedure 572 for wildfire suppression in the ERA.

Task 1: As time and resources, become available, Unit staff to work with Resource Protection Specialist to develop wildfire response plan and use Minimum Impact Suppression Techniques (MIST).

Task 2: Consider prescribed fire as a potential management tool for restoration purposes if needed in dry and dry mesic northern forests.

Objective 2: **Monitor for illegal ATV use and enforce land use rules as needed on state land. (Follow DNR Work Instruction 7.2) http://www.michigan.gov/documents/7_133228_7.2.pdf**

Task 1: Work with local enforcement to control illegal ORV use by reporting any discovered uses to law enforcement.

Task 2: Stand examiners will consider proposing road closures as part of the normal inventory process (based on 2009 YOE OI) and block ORV access where feasible. Road closure proposals must consider damage resulting from ORVs and other forest users bypassing the road closure.

Task 3: Monitor natural reforestation of the trails after ORV closure through normal inventory processes.

Objective 3: Enforce local land use rules to remove illegal blinds and trash.

Task 1: Follow Work Instruction 7.2 and continue to refer illegal trash and blinds to DNR Law Enforcement Division (LED).

Objective 4: Maintain closed canopy conifer stands as well as super-canopy trees and develop a management approach that focuses on the long-term sustainability of northern white cedar.

Task 1: Evaluate and monitor regeneration through normal inventory process.

Task 2: Per regeneration evaluation, passively recruit northern white cedar by allowing natural processes to occur and do not salvage cut within the ERA unless it is conducive to ERA goals.

Goal 2: Protect and maintain known populations of listed species such as dwarf lake iris and Pitcher's thistle.

Objective1: Maintain habitat by a.) Following Work Instruction 7.2 and reporting illegal ORV use to LED and b.) Allowing natural process to occur within the ERA when compatible with ERA management goals.

Goal 3: Seek appropriate level of protection for the ERA on private land in-holdings.

Objective 1: At the District and Statewide levels, work conservation groups to seek voluntary cooperation with landowners within holdings within the ERA using DNR private land programs.

Objective 2: Support opportunities for acquisition and/or work with conservation groups to acquire conservation easements on private land.

Objective 3: At the District and Statewide Levels, consider working with Parks and Recreation Bureau, Fisheries Division and/or MDOT to develop interpretive information about the Wooded Dune and Swale complex and associated ERA's in the Garden Peninsula. (Opportunities exist at Fayette and Indian Lake State Parks, MDOT Roadside Park on US-2 and Thompson Hatchery)